

**Biodiesel**  
**Fuel Infrastructure Presentation**  
**Massachusetts Clean Cities**  
**EPA Act Fleet Workshop**

Dennis K Burke, Inc  
Ed Burke  
Chairman of the Board

# Dennis K Burke's Profile

- Dennis K Burke, Inc
- 50 years of reliable service
- Service region – Maine to Maryland
- Services offered –
  - Wholesale Fuel and Commercial Fuel Delivery available Maryland to Maine
  - 24-7 on call dispatching,
  - Hedging and Price Management Options

# Burke First with Biodiesel

- Dennis K Burke had the first station to retail biodiesel at the pump. Additionally, we have been partnered with the State of Massachusetts as its principle biodiesel vendor from 2007 through the present.
- With Dennis K Burke, you can be confident in the quality and availability of your biodiesel, because as pioneers in bringing bio mainstream, we have built the infrastructure you can count on.

# Biodiesel Use on the Increase

- Biodiesel has been available on state contract since FY 2007

- FY2007            206,201 gallons
- FY2008            819,824 gallons
- FY2009            1,152,249 gallons

# Statewide Contract

- Dennis K Burke currently holds the Massachusetts State contract for biodiesel, including blends from B5 to B20.
- Massachusetts will likely use upwards of three quarters of a million gallons of biodiesel blends this coming year (100K pure bio)
- Burke has the infrastructure in place to handle your biodiesel needs as well.

# Statewide Contract Pricing

Zone	Vendor	B5 LTL	B5 TL	B10 LTL	B10 TL	B15 LTL	B15 TL	B20 LTL	B20 TL
Zone 1	DK Burke	.0828	.0580	.1328	.1080	.1728	.1380	.2228	.1680
Zone 2	DK Burke	.1172	.0792	.1572	.1092	.1892	.1292	.2192	.1592
Zone 3	DK Burke	.0638	.0448	.1028	.0998	.1428	.1358	.1728	.1658
Zone 4	DK Burke	.1085	.0782	.1485	.1282	.1785	.1582	.2095	.1882
Zone 5	DK Burke	.1592	.1090	.1892	.1348	.2092	.1548	.2392	.1648
Zone 6	DK Burke	.1756	.1242	.2026	.1342	.2226	.1542	.2426	.1742
Zone 7	DK Burke	.1652	.1272	.1962	.1472	.2262	.1672	.2462	.1812
Zone 8	DK Burke	.1792	.1296	.1992	.1546	.2192	.1696	.2382	.1796

# Why Biodiesel?

- **National Security:**  
Reduction of imported petroleum
- **Environment:**  
Reduction in greenhouse gases
- **Public Health:**  
Less toxic to human health
- **Economic:**  
Aid to U.S. farmers
- **Operations:**  
A performance enhancer to conventional diesel





# Burke Fuel Quality Checklist

Test	ASTM Limit	Burke Values
Cloud Point	Report Value	Seasonal
Free Glycerin	0.020% mass, max	0.014% mass, max
Total Glycerin	0.240% mass, max	0.160% mass, max
Free Water & Sediment	0.050% vol, max	0.020% vol, max
Acid Number	0.50 mg KOH/g, max	0.40 mg KOH/g, max
Kinematic Viscosity @ 40°C	1.9 – 6.0 mm <sup>2</sup> /sec	3.8 – 5.0 mm <sup>2</sup> /sec
Sulfur: S 15 Grade	15 ppm, max	12 ppm, max
Copper Strip Corrosion	No. 3, max	No. 1, max
Na and K, combined	5 ppm, max	1.5 ppm, max
Ca and Mg, combined	5 ppm, max	1.5 ppm, max
<b>Cold Soak Filtration Time</b>	<b>360 sec</b>	<b>200 sec/360 sec</b>
<b>Monoglycerides</b>	<b>Not required</b>	<b>0.50% mass, max</b>
<b>Diglycerides</b>	<b>Not required</b>	<b>0.20% mass, max</b>
<b>Triglycerides</b>	<b>Not required</b>	<b>0.20% mass, max</b>
<b>Moisture (Karl-Fischer)</b>	<b>Not required</b>	<b>400 ppm, max</b>
<b>Visual Inspection</b>	<b>Not required</b>	<b>1, max</b>
<b>Relative Density @ 15 °C</b>	<b>Not required</b>	<b>0.86–0.90</b>
Oxidation Stability*	3 hrs, min	6 hrs, min
Cetane	47, min	47, min
Flash point	93°C, min	93°C, min
Alcohol Control: Methanol	0.2% vol, max	0.2% vol, max
Phosphorous	0.001% mass, max	0.001% mass, max
Carbon Residue, 100% sample	0.050% mass, max	0.050% mass, max
Sulfated Ash	0.020% mass, max	0.020% mass, max
Distillation at 90% Recovered	360°C, max	360°C, max



# What has changed with Bio in Massachusetts?

- Effective 09/01/09, the B100 feedstock has changed from a virgin soy to a recycled product.
- This change was implemented at the request of DOER and EOEAA. This switch from soy product currently on contract to waste oil feedstock will allow state agencies to truly “Lead by Example” by supporting the statewide legislative biofuel mandate established in the Biofuels Act of 2008 ten months in advance of the deadline.
- The Biofuels Act of 2008 requires that all fuel sold in the Commonwealth contain biofuels that provide a 50% greenhouse gas (GHG) benefit over equivalent petroleum products by July 1, 2010. The Environmental Protection Agency estimates an 80% lifecycle GHG emission reduction from the use of waste feedstock biodiesel because it is assumed there are no land use impacts associated with growing feedstock (e.g. soy beans) for fuel.

# B100 Feed Stock Information

- Product: Bio G-3000
- BUTLER – Biodiesel Yellow Grease
- Produced by Griffin Industries, Butler, KY
- Griffin has been producing bio since 1998
- BQ-9000 Certified Accredited Producer
- All Biodiesel meets ASTM D6751 specifications
- Certificate of Analysis with every lot

# Is there any downside to Bio?

- Biodiesel has outstanding cleaning properties, and will clean your fuel lines - we recommend changing your fuel filters after the first tank
- Biodiesel raises cloud points by 1-5° F.
- Always spec lower cloud point biodiesel for winter operation in colder climates (Spec your diesel as you normally would for winter operation)
- Always purchase blended B20 (EPA customers)
- B5 is becoming the blend of choice! (OFTEN BY THE ENGINE MANUFACTURERS' RECOMMENDATION)
- Use #1 diesel if a concern exists. Biodiesel lubricity characteristics give #1 diesel higher lubricity than straight #2 diesel
- Biodiesel can degrade natural rubber (*pre-1980 engines*)

# Fueling Infrastructure Options

- Good News About Infrastructure
  - Biodiesel blends require no changes to vehicle engines, nor special storage conditions. In other words, your infrastructure cost is essentially zero.
  - Costing options
    - Dennis K Burke is equipped to provide you pricing on demand or based on pre-negotiated contracts. Our pricing department can provide you with information regarding the best options for your specific needs.

# Fleetwide & CFN

- Dennis K Burke features the Dennis K Burke FleetWide CFN card, which offers your fleet drivers flexibility when fueling at retail locations.
- With our card, you can fuel anywhere you see the FuelMan or CFN logos (over 32K locations nationwide). Centralized billing and online account control allows you to track card usage which could allow you to fuel up with biodiesel throughout the state while maintaining cost control.



In addition to retail or “at-the-pump” biodiesel availability, Burke has a Holyoke based Biodiesel facility with over 35K storage capacity, and our Chelsea based headquarters also boasts biodiesel storage in bulk plus packaged availability.





# Advantages for YOUR Fueling Infrastructure

- Works in existing diesel engines with no modification
- Can achieve emissions reductions across an entire diesel fleet
- An immediate solution.
- Works in heavy-duty applications
- Can work in conjunction with any new vehicle program  
(i.e., CNG is new vehicles, biodiesel in existing vehicles)
- Requires no new refueling infrastructure
- As easy to transition out of as it is to implement
- Can be used in conjunction with Ultra Low Sulfur Diesel, particulate traps, catalytic converters, or diesel hybrid electric vehicles
- Provides direct aid to US farmers
- Available right now anywhere in the country
- Has a closed carbon cycle
- 3.2:1 production value  
(highly efficient)

# Examples of Fleets Using Biodiesel

- Massachusetts' State Fleets and Entities
- Harvard University
- Taunton State Hospital
- Old Town Trolley
  - Bio blends allow state fleets to both meet EPA Act and Governor's mandates in a cost effective manner
  - Lack of engine modification or specialized transport vehicles provides bottom line savings for organizations using biodiesel as compared with other alternative fuels.

# Thank You

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For more information on biodiesel, visit

[www.burkeoil.com](http://www.burkeoil.com)